

DESCRIPTIONS OF NEW CHINESE CLAUSILLE.

By DR. O. BOETTGER and B. SCHMACKER.

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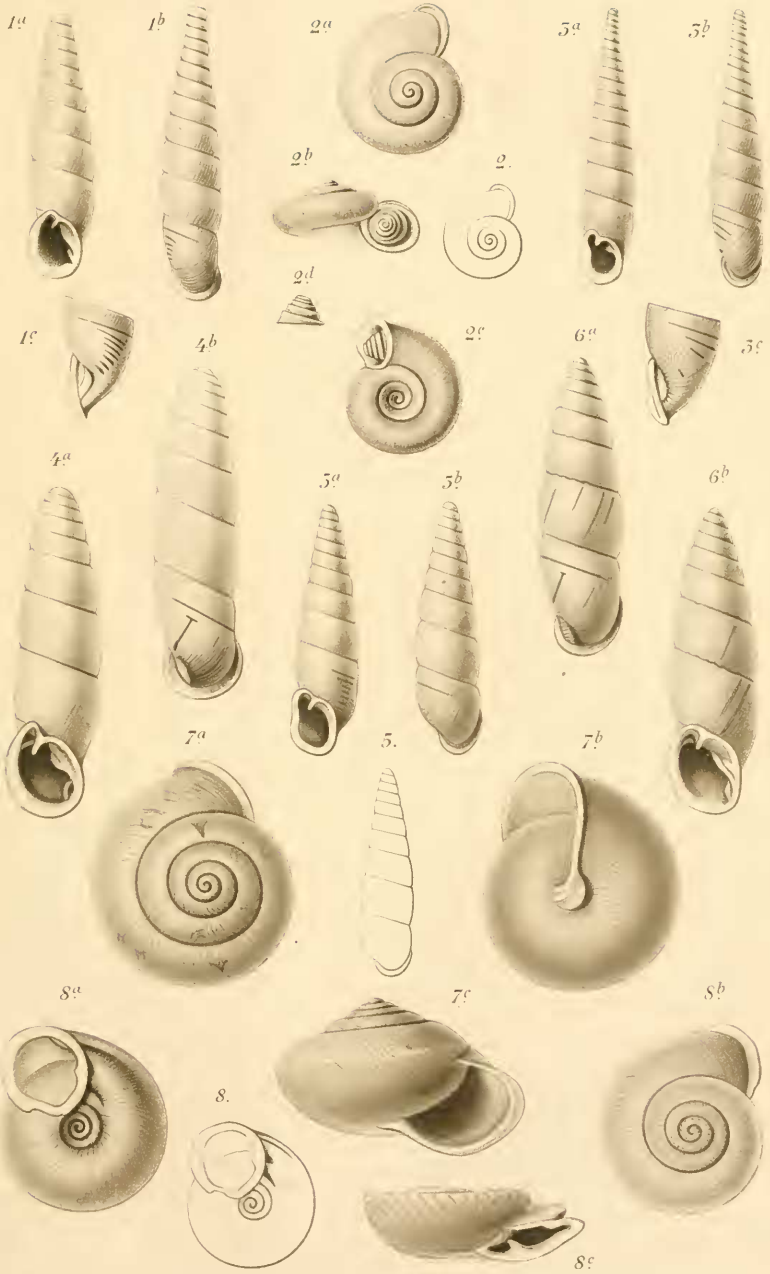
PLATES VIII. AND IX.

THE majority of the shells to be described in this and subsequent papers were obtained by the Japanese collectors of Mr. Carl Bock, the well-known Bornean traveller—now Consul-General, for Sweden and Norway, at Shanghai—and Mr. B. Schmacker on an expedition from Ichang overland to Chungking in the province of Sytshouan, and thence to Kiatingfu. The intention was to push on to Mount Omi, but the small party was turned back by the Chinese a few miles beyond Kiatingfu and had to return to Chungking, where they took boat for Ichang. The results of this expedition were not as satisfactory as expected, which was without doubt due to the fact that, instead of making a halt on the road now and then for the purpose of collecting, the party was hurried on towards its final goal—Mount Omi—which after all was never reached. The best results were obtained after their return to Ichang, when they went to a place called Changyang, 120 *li* south of Ichang, in the province of Hupeh. Here, and at the neighbouring Kaochahien, they stopped a fortnight and obtained a number of interesting species, partly new to science.

A second expedition, sent out by Mr. Bock in the following year, 1891, yielded even smaller results. This time the party consisted of Mr. Bock's Japanese collector and the Chinese collector of the late Captain Yankowsky, whom he had taken into his service. Their orders were to visit Hunan and then proceed to Yünnan by way of Kueichow. Money to defray their expenses was deposited with the mission-stations at the towns they were to touch *en route*, by which measure Mr. Bock thought he would be reasonably sure of obliging the men to follow the road he had mapped out for them. However—the European proposed and the Chinaman disposed—when the latter returned to Shanghai, it was found that he never visited Hunan, and that instead of penetrating into the wildernesses of Kueichow and Yünnan he had preferred to tread the comfortable roads, from a Chinese point of view, of Sytshouan (which province, at least in the parts he visited, is one of the most cultivated in China), and that he had travelled over almost the same ground as the preceding expedition. Apparently, however, the men this time succeeded in reaching Mount Omi, though we cannot be certain of the fact. Mr. Bock's Japanese collector having died shortly after his return, the names of the localities had to be translated by Mr. Schmacker's man, who was not of the party, and we cannot, therefore, be sure of their correctness. It finally transpired that the



New CLAU'SILLAE and HELICES from China.



New *CLAUSILLAE* and *HELICES* from China.

Chinaman had contrived to get hold of the deposits at the mission-stations by simply writing for them!

A trip from Shanghai *via* Hangchowfoo to Kiukiang overland, undertaken by Dr. Franke of the German Consulate at Shanghai, was, from a conchological point of view, also disappointing. (An account of the voyage was published in the August number of the *Messenger*, a missionary paper printed in Shanghai, for 1892.)

The rest of the species to be described were obtained from Messrs. Pratt and Kricheldorf, who in 1890 travelled in Sytshouan, collecting butterflies for Mr. Leach; from the late Mr. Yankowsky, captain in the service of the China Merchants Steam Navigating Company; from Dr. Henry, of the Imperial Chinese Customs, the well-known botanist (who, in his turn, obtained them from Father Laurentius Fuchs); from Dr. Faber, another eminent botanist, who visited Mount Omi in 1887; and finally through the assistance of Dr. Barchet in Ningpo. To all these gentlemen our best thanks are due. The Hongkong species were collected by Mr. Schmacker and his Japanese collector Tetsu. We have also to record our great obligation to Professor Ed. von Martens and Mr. Edgar A. Smith for their kind assistance in identifying doubtful species by comparison with the types in the Collections at Berlin and the British Museum (Natural History).

CLAUSILIA, Draparnaud.

Sect. *PHÆDUSA*, H. and A. Adams.

I. Sub-sect. *EUPHÆDUSA*, Bttg.

1. *CLAUSILIA PRÆCELSA*, Gredler.

Gredler, Jahrb. d. d. Mal. Ges. 1884, p. 155.

Four typical specimens from Lytschouanhien, from Father Fuchs, unfortunately all in bad condition.

2. *CLAUSILIA FILIPPINA*, Heude.

Heude, Moll. terrestres, p. 63, pl. xx. fig. 24. Von Möllendorff, Jahrb. d. d. Mal. Ges. 1883, p. 228. *Gredler*, xiii. Stück, Jahrb. d. d. Mal. Ges. 1887, p. 357 (*C. præcelsa*, var. *minor*, *Gredler ex typo!*).

Hab.—Changyang, province Hupeh, leg. collector, all decollated.

Alt. 29·5,	diam. max. 5·3	mm.	11	whorls.
„ 35·0,	„ „ 6·25	„	10	„
„ 36·6,	„ „ 6·25	„	12½	„
„ 25·0,	„ „ 5·4	„	7	„
„ 31·0,	„ „ 6·5	„	7	„

Two specimens were also received from Father L. Fuchs, as having been collected at Lytschouanhien (province Hupeh?), both decollated and measuring—

Alt. 25·8,	diam. max. 5·8	mm.	7	whorls.
„ 26·0,	„ „ 5·5	„	8	„

The fact that Heude has figured a particularly slender and small specimen has made it difficult to recognise this species. In reality an original specimen in our possession (from Heude) shows alt. 33·5, diam. max. 6·5 mm. as against alt. 27, diam. max. 4 mm. in his diagnosis. Besides, he says in his description: "marquées de stries nettes, régulières et partout égales," whereas the species, like *C. pracelsa*, Gredl., is so minutely striated that it is glossy, like silk, and it would certainly be difficult to count the striæ with the naked eye.

If Gredler were right in considering this form a small variety of his *C. pracelsa*, then the latter name would be a synonym of *C. Filippina*, Heude. The two are nearly related, but according to the material before us they are specifically distinct.¹

C. pracelsa differs from *C. Filippina*, H., in its larger size, and in its whole form, which is more "turrito-cylindratus"; in its larger aperture, which at the same time is more oblique and broader oval-rhombic; in its broader peristome being spread out flat; in its obliquely ascending, more angulated lamella inferior, and more exerted lamella subcolumellaris, which is visible in front. The texture has been quite correctly described by Gredler; it is exactly the same as that of *C. Filippina*, at least of the most abundant form of the latter.

We would finally call attention to the fact that neither does Heude in his description of *C. Filippina* mention anything about decollation, nor does the type received from him show any tendency to decollate. Our specimens are all decollated.

3. CLAUSILIA ADAUCTA, Gredler.

Gredler, Nachr. Bl. d. d. Mal. Ges. 1889, p. 156.

Leg. Yankowsky, one specimen from Ichang, province Hupeh, of 13½ whorls, alt. 31·5, lat. 5·6, alt. apert. 6·5, lat. apert. 4·6 mm.; two specimens from Chingping, province Hupeh, measuring alt. 34, diam. max. 6, alt. apert. 7, lat. apert. 5·3 mm., 13 whorls, and alt. 28·5, diam. max. 5·5, alt. apert. 6·2, lat. apert. 4·6 mm., 12 whorls.

4. CLAUSILIA TETSUI, n.sp. Pl. VIII. Fig. 6.

Gredler, Jahrb. d. d. Mal. Ges. 1884, p. 156 (*C. Filippina*, Gredl., non Heude, ex typo!).

Testa fusiformis, gracilis, tenuiuscula, corneo-fuscula, parum nitens; spira elongato-turrita; apex acutus, non decollatus. Anfr. 12-13 convexiusculi, lentissime accrescentes, sutura impressa, albido leviter filomarginata disjuncti, sat distanter costulato-striati, costulis obliquis ca. 30-40 in anfractu penultimo, multo angustioribus quam interstitia, ultimus subtus modice angustatus, basi rotundatus, ¼ altitudinis testæ non æquans. Apert. parva, subverticalis, parum obliqua, exacte ovata; peristoma continuum, breviter solutum, expansum et reflexum, callose fusculo labiatum, labio convexo; lamella superior verticalis, marginalis, cum spirali continua, inferior sigmoidea oblique ascendens, intus arcu magno spiralter torta, subcolumellaris subemorsa, fronte inspiciente distincte conspicua. Plica principalis longa, fere

¹ Cf. footnote, Nachr. Bl. d. d. Mal. Ges. 1889, p. 156.

usque ad peristoma emersa, palatalis suprema distincta, brevis, palatalis secunda, lunella et palatalis infima indistinctæ. Lamella spiralis intus brevior quam infera. Clausilium apice recurvum, acutatum, levissime emarginatum.

Alt.	27·0,	diam. max.	5·5,	alt. apert.	5·6,	lat. apert.	4·2	mm.
„	24·5	„	„	4·6,	„	„	5·2,	„
„	20·0	„	„	4·0,	„	„	4·0,	„
„	27·5	„	„	4·5,	„	„	5·2,	„

Hab.—Changyang, province Hupeh, leg. collector.

This species, which we, as well as Gredler, have formerly mistaken for *C. Filippina*, Heude, is distinguishable from its allies in being very strongly striated, in fact “costulato-striatus,” and in possessing the trace of a lunella, the minute central palatal plaits forming a faint callosity.

Dr. Boettger has in his possession a specimen said to have been found at Tongsan in the district of Seizo.

As Gredler has already pointed out, the nearest ally to our species is *C. adaucta*, Gredler.¹ The latter is, however, larger and more slender; the whorls, which attain to as many as 14, are much flatter and are evenly and minutely striated, not “costulato-striatus” (the striation on the neck is three times finer than in *C. Tetsui*); besides its colour is of a darker brown shade. In the oral folds the most notable difference is that the upper plica palatalis in *C. adaucta* is more divergent in front, descending in an arched curve, whilst in *C. Tetsui* it runs nearly parallel to the plica principalis. *C. Tetsui* is viviparous.

5. CLAUSILIA FABERI, n.sp. Pl. VIII. Fig. 7.

Testa sat magna, subrimata, turrato-claviformis, gracilis, tenuiuscula, rufescenti-brunnea, sericina; spira elongato-turrata lateribus concaviusculis; apex cylindratus, obtusulus. Anfr. 13½ fere plani, sutura distincta sejuncti, subtiliter striatuli, penultimus subventriosus, ultimus decrescens, basi rotundatus, ante aperturam parum validius ruguloso-striatus quam penultimus. Apert. parva, obliqua, ovato-piriformis, basi valde recedens, faucibus brunneis, sinulo erecto acutato; perist. continuum, modice solutum, parum expansum, vix reflexum, leviter incrassatum, albidum. Lamellæ modicæ; superior marginalis verticalis, parum alta, intus cum spirali subito humiliore connexa; inferior suboculta, sigmoidea, oblique ascendens, a basi intuenti valde spiraliter torta, superiori sat approximata; sub-columellaris tenuis, emersa, submarginalis. Plica principalis brevis (4·25 mm. longa), remota, intus lineam lateralem non transgrediens; loco lunellæ deficientis palatales laterales minimæ, æquales, 2 superæ et 2 inferæ, spatio latissimo separatæ.

Alt. 30·5 mm.; diam. max. 5·75 mm.; alt. apert. 5·75, lat. apert. 4 mm.

This unique specimen was collected by Dr. Faber, of Shanghai, on

¹ Cf. Nachr. Bl. d. d. Mal. Ges. 1889, p. 176.

his trip to Mount Omi, in Sytshouan. The exact locality is not known, but it must be in either Hupch or Sytshouan.

The inner ends of the lamella spiralis and the lamella inferior run out nearly parallel; the former is only slightly shorter than the latter. As regards shape, size, and colouring, the species may be compared to *C. adaucta*, Grell., but it has a smaller aperture, more receding at the base, the largest diameter of which is oblique to the axis. The lamella spiralis is less high in the interior, and, above all, the plicæ principalis is shorter by half, and placed far back; below the plicæ principalis, as well as at the base near the lamella subcolumellaris (which is visible through the shell), are two very short and fine thick palatals.

C. Tetsui differs from our species even more than *C. adaucta*, viz. in the sculpture being totally different, and in having a long plicæ principalis.

6. *CLAUSILIA LONGURIO*, n.sp. Pl. VIII. Fig. 2.

Testa sat magna, subrimata, subulato-claviformis, gracillima, solidula, corneo-flava, sericina; spira subulato-turrita, apex modice acutus summo minuto; anfr. 13 perparum convexiusculi, lentissime accrescentes, sutura distincta fere submarginata disjuncti, tenuiter et obsolete striatuli, ultimus subtus vix angustatus, latere planatus, basi convexiusculus, $\frac{1}{4}$ altitudinis testæ non æquans. Apertura parum obliqua, verticalis, leviter sinistrorsa, subregulariter ovata, sinulo parvo erecto acutato; peristoma continuum, levissime solutum, latiuscule albo-labiatum, sub sinulo callosum. Lamellæ validæ, superior verticalis, marginalis, cum spirali continua, inferior alte sita, sigmoidea, ascendens, intus superiori approximata, distincte spiralliter torta, subcolumellaris fronte inspicienti vix conspicua. Plicæ principalis trans lineam lateralem non transgrediens, antice usque fere ad peristoma exserta, a lunella arcuata, dorso-laterali, parum distincta separata.

Alt. 29.6 mm.; diam. max. 4.8 mm.; alt. apert. 6, lat. apert. 4.5 mm.

Hab.—Chingping, leg. Yankowsky, at a height of 2000'. Only one specimen.

It reminds one of a very slender form of *C. adaucta*, Grell.; it is, however, more obsoletely striated, the apex is less pointed, the lamella subcolumellaris is more exserted, distinct upper and lower palatal plicæ are absent, the plicæ principalis almost reaches the peristome, which, below the exceptionally small sinulus, has a strongly developed callosity, protruding into the aperture.

7. *CLAUSILIA LATILUNELLARIS*, n.sp. Pl. VIII. Fig. 3.

Testa modice subrimata, fusiformis, gracilis, tenuis, corneo-fusca vel violacco-fusca, albido costulata, subopaca; spira fere exacte turrita; apex cylindratus, acutus, luteus. Anfr. 11 planiusculi, sutura profunde impressa disjuncti, fere subscalariformes, lente accrescentes, distanter oblique costulati, costulis 36-38 in anfractu penultimo, obliquis, acutis, filiformibus, angustioribus quam interstitia; ultimus subdecrescens, latere planatus, basi rotundatus, cæteris distantius sed non validius costulatus, $\frac{1}{4}$ altitudinis testæ

æquans. Apertura protracta, valde obliqua, subverticalis, circulari-piriformis, sinulo modico rotundato; peristoma undique late solum, latissime subplane expansum, sub sinulo leviter gibbosum, albolabiatum. Lamellæ modicæ, approximatæ, superior marginalis, compressa, obliqua, a spirali profundissima non conspicua separata; inferior altissime sita, horizontalis, a basi intuenti arcu latissimo spiraliter torta, basi noduloso-incrassata; subcolumellaris oblique intuenti vix conspicua. Plica principalis brevis, in apertura conspicua, cum lunella valde arcuata, superne latissima, dorso-laterali connexa. Lamella spiralis intus longior et altior quam lam. inferior. Patella clausilii brevis, latissima, sphaerico-triangularis, apice latissime truncata.

Alt. 19 mm.; diam. 3.75 mm.; alt. apert. 3.75, lat. apert. 3.25 mm.

Hab.—Chingping, leg. Capt. Yankowsky, only one good specimen.

This species, which in shape somewhat resembles *C. crobylodes*, Schm. and Bttg., recalls the undescribed species, No. 25, of our paper in *Nachr. Bl. d. d. Mal. Ges.* 1891, p. 25, from Formosa, but has stronger, whitish ribs, is smaller, and has a shorter and more rounded aperture.

8. CLAUSILIA BELEMNITES, n.sp. Pl. VIII. Fig. 1.

Testa parva, rimata, solidiuscula, subventrioso-fusififormis, fulva, zona suturali lata corneo-flava ornata, sericina; spira convexo-turrita; apex mucronatus, angustus, acutus. Anfr. $10\frac{1}{2}$ –11 convexi, sutura profunde impressa disjuncti, distincte striati, fere costulato-striati, striis obliquis, interdum subundulatis; penultimus subventriosus, ultimus modice attenuatus, cervice planatus, basi rotundatus, ante aperturam subinflatus, distanter costulato-striatus, $\frac{1}{4}$ altitudinis testæ non æquans. Apertura verticalis, subaxialis, exacte piriformis, sinulo recedente et appresso; peristoma continuum, subsolutum, modice expansum, reflexiuseculum, albolabiatum. Lamella superior aut modica aut obsoleta, marginalis, brevis, a spirali profunda longe separata; inferior horizontaliter mediam in aperturam prosiliens, basi concava, a basi intuenti valde spiraliter torta; subcolumellaris inconspicua. Plica principalis profunda, intus lineam lateralem vix transgrediens, loco lunellæ palatalis superior longa principali subparallela et 6–9 inferiores perparum distinctæ, sæpe deorsum lunellam incompletam indicantes. Lamella spiralis intus parum longior quam lam. inferior. Clausilium breve, latum, basi rotundato-truncatum, apice recurvo acuminatum.

Alt. 9.5–13.5 mm.; diam. max. 2.5–3 mm.; alt. apert. 2.5–3, lat. apert. 2–2.3 mm.

Hab.—Tangyang, province of Hupeh (about 150 Chinese *li* east of Chinchowfu), leg. Chinese collector of Capt. Yankowsky.

The nearest ally is *C. Anceyi*, Bttg.¹ Our species is, however, smaller, has fewer whorls, a smaller apex, which is distinctly mucronate, and a much thicker, white peristome.

9. CLAUSILIA PLANOSTRIATA, Heude.

Heude, *Moll. terr. de la vallée du fleuve bleu*, p. 73, t. xviii. fig. 15.

¹ *Nachr. Bl. d. d. Mal. Ges.* 1882, p. 68.

This species belongs to the same group as our *C. belemnites*. It differs, however, in being sparsely ribbed, the upper whorls decreasing in width regularly, not suddenly, so that the apex is scarcely mucronate, and above all in that the axis of the narrower pear-shaped aperture forms a more oblique angle with the axis of the shell. The peristome of *C. planostriata* is besides scarcely thickened.

We have before us two specimens received from Heude, measuring alt. 12·2–12·8 mm.; diam. max. 3 mm. Heude gives the diameter as 2 mm., which is probably a mistake.

10. *CLAUSILIA BRODERSENI*, n.sp. Pl. VIII. Fig. 5.

Testa parva, subrimata, gracilis, anguste fusiformis, pellucida, nitida, corneo-fulva; spira turrita, apex acutulus. Anfr. 9 convexiuseuli, sutura profunda interdum tenuissime albo-filosa disjuncti, obsolete striati; ultimus basi rotundus, subsaccatus, valide costulato-striatus, $\frac{1}{3}$ altitudinis testæ non æquans. Apertura parva, subverticalis, rotundato-piriformis, sinulo lato, erecto, superne parum acuto. Peristoma, continuum, solutum, superne sinuatum, breviter expansum, intus purpureo-sublabiatum. Lamella superior marginalis, humilis, verticalis, cum spirali aut contigua aut continua; inferior oblique ascendens, intus altior, superiori approximata, spiraliter recedens, antice in extremo margine leviter nodulifera; sub-columellaris inferiori subparallela, filiformis, marginalis, utrinque canalifera. Sub lamella subcolumellari in basi aperture pliculæ obsoletæ. Apparatus claustralis uti in *Clausilia tau*, sed principali brevior; lamella spiralis intus altior et longior quam lam. inferior. Clausilium latum, basi rotundato-dilatatum, apice recurvo, lateraliter submarginato, acutato.

Alt. 10·2–12 mm.; diam. max. 2·3–2·5 mm.; alt. apert. 2·5, lat. apert. 1·8–2 mm.

Hab.—Shekko, in the island of Hongkong.

Differs from *C. tau*, Bttg., in its smaller and more slender shell and its less distinct striation. The lamella inferior is higher (*i.e.* more strongly developed) and approaches closer to the lamella spiralis; it runs out into two faint little knots. On the peristome at the base of the aperture there are obsolete plaits, and the peristome is reddish-brown. In *C. tau* var. *cyclostoma*, Mölldff., from Canton, the lamella inferior is typical, *i.e.* it is neither so high up in the interior of the aperture, nor does it approach the lamella spiralis so closely as in our species. The two knots or small plaits of the dextral margin are similar to those in *C. Gerlaeki*, from the Lofoushan, but in the latter the upper one at least is more pronounced.

II. Sub-sect. *PSEUDONENIA*, Bttg.

11. *CLAUSILIA BENSONI*, H. Ad.

H. Adams, Proc. Zool. Soc. 1870, p. 378, t. xxvii. fig. 10. Pfeiffer, Mon. Hel. viv. 1877, viii. p. 487. Heude, Moll. terr. p. 156, t. xxxiv. fig. 22. Non Boettger, in Hilber, Sitz. Ber. Akad. Wien, Abth. I. 1883, p. 1375, t. vi. fig. 8.

A comparison of our specimens with the type of *C. Bensoni* in the British Museum (Natural History) has proved beyond doubt that we have before us the species described by H. Adams. What Boettger took for *C. Bensoni* has turned out to be a new species—*C. pseudobensoni*—the diagnosis of which will be found in this paper. Adams' diagnosis may with advantage be supplemented by the following additions, viz.:

Testa subclavato-fusiformis, anfractibus 10–11½, capillaceo-striata, striis hic illic leviter undulatis et quasi malleolatis, in cervice validioribus. Apertura faucibus fuscis, lamella superior obliqua cum spirali continua, subcolumellaris inconspicua, plica principalis longa, lineam lateralem attingens, palatales dorso-laterales 4–6 sat longæ, longitudine deorsum decrecentes. Palatales antrorsum cum principali divergentes. Clausilium uti in *C. pseudobensoni*.

Hab.—Chunking, province Sytshouan (Schmacker's collector). Alt. 15·2–18 mm.; diam. max. 3·8–4 mm. We have besides one specimen from Lytshouanhien, collected by Father L. Fuchs, received through Dr. Henry. Alt. 15·7 mm.; diam. max. 3·5 mm. Lytshouanhien is probably somewhere in the province of Hupeh.

12. *CLAUSILIA RECEDENS*, n.sp. Pl. VIII. Fig. 9.

Aff. *C. pseudobensoni*, Schmacker and Boettger, sed minor, nitida, fere lævis, lamella inferiore multo magis recedente, fronte insipienti aut vix aut non conspicua. Testa parva, subrimata, fusiformis, solida, rufocastanea, ad suturas pallidior; spira turrita lateribus convexiusculis; apex modice acutus. Anfr. 8–9 convexi, sutura profunde impressa disjuncti, obsolete striati, ultimus deorsum leviter angustatus, latere planatus, basi rotundatus, ante aperturam leviter ascendens, regulariter costulato-striatus et striis spiralibus obsoletissimis reticulatus, $\frac{2}{3}$ altitudinis testæ æquans. Apertura parum obliqua, axialis, angulato-piriformis, faucibus fuscis; peristoma continuum, solutum, expansum, reflexiusculum, brunnescenti-labiatum. Lamella superior marginalis parum obliqua, e basi parum compressa triangulari oriens, humilis, cum spirali continua; inferior perprofunda, recedens, fronte intuenti vix conspicua, profunde in faucibus bipartita; subcolumellaris inconspicua. Plica principalis longissima, intus lineam lateralem transgrediens, antice fere usque ad peristoma accedens, loco lunellæ plicæ palatales laterales 5–6 longæ, longitudine deorsum decrecentes.

Hab.—Kiatingfu, province Sytshouan: alt. 10·8–12·5 mm.; diam. max. 2·6–3·3 mm.; alt. apert. 2·5–3, lat. apert. 2–2·8 mm. Lochaba (province Hupeh?): alt. 11·5 mm.; diam. max. 2·8 mm.; alt. apert. 2·6, lat. apert. 2·2 mm. (Schmacker's collector). The species was also collected by Mr. Bock's men, but no locality was given. The dimensions do not differ from those given above.

The plicæ palatales are relatively somewhat larger than in *C. pseudobensoni*, Schm. and Bttg., besides which the neck does not bulge out so much, and the striation is very much finer. The light zone under the suture, and the form of the aperture in the last-named, show it to be nearly related to this species as well as to *C. Bensoni*, H. Ad. *C. Magnacianella*, Heude (*op. cit.* p. 67, t. xx. fig. 28), appears

to be an even closer ally. Heude says, however, in his description: "anfr. vix convexi, sutura vix impressa;"—besides, it has only four genuine plicæ palatales, whilst the lamella superior is much more oblique. *C. comminuta*, Heude, is more slender in form, 16 mm. long; the figure shows four genuine plicæ palatales, the upper and the lowermost of which are longer than the intermediate ones, so that there is no doubt that the species is distinct from ours. We have not had the opportunity of comparing the original specimens of the two last-named species.

A single specimen from Kiatingfu differs in some respects; provisionally we will call it var. *discreta*, n. var. It may be characterized by the following diagnosis, viz.:

Testa majore, graciliore, pallidior, spira magis exserta lateribus fere convexiusculis, apice acutior, anfr. 10, apertura magis obliqua, peristomate magis infundibuliformi-expanso, lamella inferiore paullulo minus recedente. Alt. 14·25 mm.; diam. max. 3 mm.

13. *CLAUSILIA PSEUDOBERNSONI*, n.sp.

Boettger, in Hilber, Sitz. Ber. Akad. Wien, Abth. I. 1883, p. 1375, t. vi. fig. 8 (*C. Bernsoni*, non H. Ad.).

Testa profunde rimata, periomphalo sat magno, fusiformi-clavata, solidiuscula, sericina, obscure castanea vel purpureo-cerasina, sutura et basi pallidioribus, sæpe albido late marginatis; spira turrita lateribus convexiusculis; apex pallidior, acutus. Anfractus 9-10 convexi, sutura profunda, fere subpapillifera disjuncti, dense capillaceo-striati, striis rugulosis hic illic inter se confluentibus, ultimus penultimo parum angustior, basi rotundatus et subsaccatus, ante apert. leviter ascendens, non validius striatus quam penultimus, fere $\frac{1}{3}$ altitudinis testæ æquans. Apertura subverticalis, circulari-piriformis, faucibus fuscis; peristoma continuum, breviter solum, modice expansum et reflexum, albo sublabiato; lamellæ humiles, superior marginalis, a spirali profunda, vix conspicua longe separata, inferior oblique ascendens, recedens, intus subfurcata; subcolumellaris inconspicua. Plica principalis brevis, suturæ approximata, loco lunellæ arcus obliquus plicularum palatalium 7-12 superne et inferne longiorum inter se magis distantium, media parte breviorum valde approximatarum. Lamella inferior et spiralis intus altior in faucibus longitudine æquales. Clausilium modice latum, basi oblique truncatum, apice acuminato-rotundato.

Hab.—Kwang-juen-hsien (Quang-juön), province Sytshouan; on rocks, frequent; cf. Hilber, *l.c.*

Mr. Schmacker's collector brought this species from Kiatingfu, province Sytshouan. The specimens measure alt. 12·5-17·5 mm.; diam. max. 3-4 mm.; alt. apert. 3·5-4·25, lat. apert. 2·75-3·25 mm.

Mr. Bock's collector found it at Denya (ubi?), where it does not appear to attain the same size, the specimens measuring from 12·3 to 15·3 mm.

As for its relationship to other species, especially *C. Hilberi*, Bttg., cf. *l.c.* p. 1376. *C. pallidocincta*, Mölldff., is smaller, the sculpture is finer, the lamella superior is rudimentary, the lamella inferior placed horizontally and spirally twisted inside.

III. Sub-sect. *FORMOSANA*, Bttg.14. *CLAUSILIA MAGNACIANA*, Heude.

Heude, Moll. terr. p. 66, t. xx. fig. 3.

Judging from a typical specimen sent by Père Heude, this species is very similar to *C. pacifica*, Gredl., but differs in having a more strongly developed lamella superior which is separated from the lamella spiralis, whilst in *C. pacifica* the lamella superior and lamella spiralis are distinctly continuous. The lamella inferior is more distant from the lamella superior, and there is a notch in the peristome above the lamella superior; there are only four genuine plicæ palatales, and finally the plica principalis ends 4 mm. distant from the peristome, whereas in *C. pacifica* it is only 2 mm. from the margin. One step further in the development of the lamella inferior leads us on to *C. artifina*, Heude, and *C. gigas*, Mölldff., which two species must therefore be included in the section *Formosana*. We do not concur in Möllendorff's opinion.

The dimensions of the type specimen are as follows: alt. 26 mm; diam. max. 6.3 mm.

15. *CLAUSILIA GIGAS*, Mölldff.

Von Möllendorff, Jahrb. d. d. Mal. Ges. 1886, p. 200, t. vi. fig. 8; Heude, Journ. de Conch. 1886, p. 299, and Moll. terr. p. 156, t. xxxiv. figs. 11, 16 (*C. labrosa* et *C. indurata*).

This species was found by Mr. Bock's collectors at Changya: alt. 28.6 mm.; diam. max. 7.5 mm. (7 whorls); alt. 35 mm.; diam. max. 8.3 mm. (8½ whorls). They are all decollated.

Judging from original specimens in our hands, *C. gigas*, Mölldff., and *C. labrosa*, Heude, are identical, and as Heude himself has declared *C. labrosa* to be synonymous with his *C. indurata*, it follows that *C. gigas* and *C. indurata* are one species, and Möllendorff's name has the priority. Both species were published in 1886, but Möllendorff's was figured, whilst Heude's figure was only given in the third volume of his "Mollusques terrestres," etc., which was not brought out until 1890. Besides, as Heude's *C. indurata* and *C. labrosa* were described in the fourth part of the Journ. de Conchyliologie for 1886, it is probable that they were actually published some months later, as the Journal is generally late in its appearance.

16. *CLAUSILIA PHYLLOSTOMA*, Heude. Pl. IX. Fig. 1.

Heude, Journ. de Conch. 1888, p. 236; Moll. terr. p. 156, t. xxxiv. fig. 15.

Testa magna, subrimata, subulato-fusiformis, solidula, corneo-fuscescens, sericina; spira elate turrata; apex semper decollatus. Anfr. superstites 8-12, parum convexi, lentissime acrescentes, sutura distincte impressa levissime albo-filosa disjuncti, minutissime rugoloso-striati, corio instar puncticulati; ultimus subtus attenuatus, cervice rotundatus, vix validius striatus quam penultimus, ante aperturam leviter ascendens, circa $\frac{1}{4}$ altitudinis testæ æquans. Apertura parvula recta et stricta, angulato-ovata vel rotundato-quadrangularis, faucibus fuscis; peristoma continuum, semper appressum, rotundato-

expansum, albo sat crasse labiatum. Lamellæ validæ, superior marginalis obliqua; inferior submarginalis, oblique ascendens, intus modice spiralliter torta; subcolumellaris compressa, emersa. Plicæ principalis longa, profunda; palatales loco lunellæ 6-7 laterales, quarum suprema duplo longior quam cæteri breves æquales. Lamella superior cum spirali continua. Spiralis intus longior et altior quam laun. inferior. Patella clausilii brevis, lata, apice recurva, incrassata, crassiuscula. Alt. 35 mm. (anfr. 9); diam. max. 7·25 mm.; alt. apert. 2·25, lat. apert. 6 mm. Alt. 38 mm. (anfr. 12½); diam. max. 7 mm.; alt. apert. 7·5, lat. apert. 5·5 mm. *Hab.*—Mountains near Ichang, province Hupeh (Schmacker's collector).

We were at first under the impression that we had a new species before us. It appeared to be nearly related to *C. phyllostoma*, Heude, yet we could not believe it to be the same species, as it differed from the figure given in the "Mollusques terrestres," which showed a much more slender shell with only three plicæ palatales. The text contains no Latin description, but Père Heude states that the species might possibly prove to be identical with his *C. indurata*. Now *C. indurata*, H., is *C. gigas*, Mölldff., as we have already shown, and since our species is certainly not *C. gigas* we were about to describe it under the name of *C. Bocki*, when we came across the description of *C. phyllostoma* published in the Journal de Conchyliologie, 1888, the existence of which we could not have known, since no reference is made to it in the "Mollusques terrestres." After a study of this description we have come to the conclusion that the species before us is *C. phyllostoma*, Heude; since our figure had, however, been drawn and the description written, we do not suppress them, since they will in some points supplement those given by the Reverend Père.

C. gigas, Mölldff., is no doubt a near ally of *C. phyllostoma*, but in the latter the whorls decrease gradually in width towards the apex, while in *C. gigas* they become narrower suddenly, so that *C. gigas* is club-shaped. The texture, too, is different. *C. phyllostoma* is finely striated, while *C. gigas* is "rugoso-striatus" and its surface therefore rougher. The lamella subcolumellaris of *C. gigas* is not visible within the aperture, while in *C. phyllostoma* it is distinctly produced to the margin. The lip of *C. gigas* is considerably thicker, and finally *C. gigas* has five plicæ palatales, all of about equal length, whilst of the 6-7 plicæ palatales of *C. phyllostoma* the upper one is considerably longer than the others.

C. Delarayana, Heude (*l.c.* p. 118, t. xxxi. fig. 5), differs in not being decollated; the lamella superior is neither so well developed, nor is it marginal; the lamella inferior is further from the lamella superior, and finally there are nine plicæ palatales instead of 6-7.

17. CLAUSILIA LEPIDOSPIRA, Heude.

Heude, Journ. de Conch. 1889, p. 42, and Moll. terr. p. 158, t. xxxv. fig. 4; Schmacker and Boettger, Nachr. Bl. d. d. Mal. Ges. 1890, p. 21, t. i. fig. 5 (*C. albopapillata*).

Heude gives the dimensions as alt. 25, diam. 5 mm., which has made it impossible to recognise the species, the more so as the last volume of the "Mollusques terrestres," containing the figure, had not

been published when we wrote our description of *C. albopapillata*. Gredler fell into the same trap (cf. Nachr. Bl. d. d. Mal. Ges. 1890, p. 39). An original specimen from Heude of alt. 22, diam. max. 4 mm., establishes beyond a doubt the identity of the two species.

18. *CLAUSILIA LONGISPINA*, Heude.

Heude, Moll. terr. p. 121, t. xxxi. fig. 12.

This species closely resembles *C. lepidospira*; the "papillæ" below the suture of the latter are, however, absent in *C. longispina* (cf. Nachr. Bl. d. d. Mal. Ges. 1890, pp. 21, 39). We have before us original specimens from Heude, measuring alt. 20·5–24·5 mm.; diam. max. 3·8–4 mm.

19. *CLAUSILIA SEGUINIANA*, Heude.

Heude, Moll. terr. p. 120, t. xxxi. fig. 8.

Doubtless belonging to subsect. *Formosana*, as proved by an original specimen in our possession. Its place in the series is probably next to *C. Magnaciana*, Heude. Our specimen is not in good condition, so we cannot say more.

IV. Sub-sect. *DEXTROFORMOSANA*, nov.

Testa dextrorsa, multispira, subclaviformis, in cervice non aut vix validius striata quam in anfractibus cæteris; lamella superior marginalis, inferior oblique ascendens, subcolumellaris aut emersa aut subimmersa. Plica principalis distincta; loco lunellæ 4–5 plicæ palatales aut longæ, aut modicæ.—Sine prov. Hunan, Hupeh et Kiang-shi.—Typ.: *Clausilia Semprinii*, Gredl.

In this section, which differs from the section *Formosana*, Bttg., principally in the fact that the shell is invariably dextral, we place *C. Semprinii*, Gredl.; *C. antilopina*, Heude; *C. Kiangshiensis*, Gredl.; *C. moschina*, Gredl. Specimens of all of these, received from the authors, are now before us: with them we also place *C. psilodonta*, Heude, the type of which we have not seen.

20. *CLAUSILIA ANTILOPINA*, Heude, var. *UNICORNU*, n.

= *antilopina*, Gredler typ., non Heude.

Differt a typo testa majore, magis clavata, castaneo-fusca, magis nitida, anfr. 11–13 nec 10–11 convexioribus, penultimo et ultimo subtus minus angustatis, cervice non distinctius striato quam anfr. penultimus. Apertura major duplo minus protracta, ovato-piriformis nec circulari-piriformis, superne magis acutata, sinulo latiore, lamellis debilioribus, subcolumellari magis immersa, peristomate minus expanso, angustius albolimbato. Cæterum typo simillima.

We have this shell from Changya (Mr. Bock's collectors in 1891; it is rather doubtful whether the locality is the Changyang of the expedition of the year before, as the shell was not then found by them), measuring alt. 19–27 mm.; diam. max. 4·3–5 mm.; also from Patung, province Hupeh, measuring alt. 18·5–24·3 mm.; diam. max. 4·3–4·6 mm.

The most notable differences in this variety from the type are the form of the shell, which is more club-shaped, and the larger, more oval aperture, which has a narrower peristome. However, these differences are so slight, and so subject to variation, that we have not

dared to add one more to the species—already difficult to distinguish—of this group.

We were able to compare two typical specimens of this species of Heude's, received from the Reverend Père himself. They measure alt. 17.6–18.3 mm.; diam. max. 3.6–4 mm. In his description, Heude gives the dimensions of only one shell, viz.: alt. 21 mm.; diam. max. 4 mm.

V. Sub-sect. *HEMIPHÆDUSA*, Bttg.

21. *CLAUSILIA MOELLENDORFFIANA*, Heude, var. *EDENTULA*, n.

Differt a typo plicæ principalis intus magis ultra lunellam producta; lamella inferiore basi nodulo non instructa, funis instar torta, denticulo infra sinulum posito nullo. Testa ventriosiore.

Hab.—Hanchowfu (province Chekiang), 3 specimens, of 11½–12 whorls; alt. 26.5–27.3 mm.; diam. max. 7 mm.

We were able to compare a specimen of the type form received from Heude of alt. 34.5 mm.; diam. max. 8 mm.

22. *CLAUSILIA LAURENTIANA*, Mölldff.

Von Möllendorff, Jahrb. d. d. Mal. Ges. 1886, p. 203, t. vi. fig. 10.

One specimen from Ichang, province Hupeh (Capt. Yankowsky). Alt. 27.6 mm.; diam. max. 8.5 mm. The locality is open to doubt.

23. *CLAUSILIA FARGESIANA*, Heude.

Heude, *l.c.* p. 119, t. xxxi. fig. 3.

An original specimen from Père Heude shows this species to be closely related to *C. Laurentiana*, Mölldff. It is, however, more cylindrical in shape, the plaits on the neck are coarser, and they are not crossed by a transverse furrow. The aperture is less protracted, more vertical, larger, and ovoid; the lamella superior is vertical, not inclined to the left, much lower inside; the lamella inferior is lower and not produced on the margin. Plaits on the peristome are entirely wanting. Alt. 32 mm.; diam. max. 9.2 mm.

24. *CLAUSILIA DECURTATA*, Heude.

Heude, *l.c.* p. 119, t. xxxi. fig. 5.

Another species closely related to *C. Laurentiana*, Mölldff. It is easily recognised by the plicæ principalis running out on the peristome, thus forming the uppermost of the many plaits. The lamella superior is not hook-shaped, nor does it incline to the left as in *C. Laurentiana*; the lamella inferior descends very low in front, and on the interlamellar space there are three to four plaits. The plaits on the peristome are narrower, more compressed, and more distinct than in *C. Laurentiana*. We were able to compare three original specimens. Their dimensions are: Alt. 23.5–28.25 mm.; diam. max. 6.6–8.2 mm.

25. *CLAUSILIA LUNATICA*, Heude.

Heude, Journ. de Conch. 1888, p. 235, and Moll. terr. p. 154, t. xxxiv. figs. 4, 4a.

This species, the nearest ally of all to *C. Laurentiana*, has the last whorl flattened, the basal ridge more developed and continued to the peristome, the umbilical area narrower, the lamella inferior placed both lower and further from the lamella superior. The most

notable difference, however, consists in the last (lowest) plica palatalis running out on the peristome. In this species, too, there are four plaits on the interlamellar space. We have an original specimen from Père Heude before us of alt. 25.5 mm.; diam. max. 7.5 mm., considerably smaller than his type. Alt. 40 mm.; diam. 8 mm.

26. *CLAUSILIA BASILISSA*, n.sp. Pl. IX. Fig. 6.

Testa subrimata, vasta, ventrioso-fusiformis, tenuiuscula, sericina, viridescenti-flava, strigis fuscidulis hic illic ornata. Spira convexo-turrata, apex obtusus summo submucronato. Anfr. 9 convexiuseuli sutura subpapillata albidofilari discreti, sat regulariter striati, ultimus paullum distortus, basi leviter sulcatus et circa rimam crista brevi angusta indutus, penultimo parum altior. Apertura subverticalis, sed leviter subtransversa, magna, ovalis, sinulo lato; peristoma late expansum, album, superne adnatum, non sinuatum. Lamellæ marginales, superior obliqua antice valde elevata, dein subito humilior cum spirali continua, inferior ab illa remota sigmoidea, media parte nodulifera, intus despiraliter recedens, subcolumellaris valida, emersa, marginalis. Plica principalis tenuis, cum sutura antrorsum convergens, peristoma fere attingens, intus vix ad lineam lateralem producta, lunella dorso-lateralis longa, substricta. Alt. 35 mm.; diam. max. 9 mm.; alt. apert. 11, diam. apert. 8 mm. Of this magnificent species only one specimen was found by the Rev. Dr. Faber on his trip to Sytshouan, probably on Mount Omi (Sytshouan).

27. *CLAUSILIA IMPERATRIX*, n.sp. Pl. IX. Fig. 4.

Differt a *C. basilissa*, nobis, testa magis cylindrata, apice multo obtusiore, anfractibus magis planatis, apertura breviter soluta, supra lamellam superiorem sinuata, lunella distincte dorsali.—Testa subrimata, vasta, subcylindrato-fusiformis, solidula, opaca, alba epidermide corneolutesca hic illic induta; spira cylindrato-turrata; apex latissimus, perobtusus, anfr. singulis ter vel quater latioribus quam altis. Anfractus 9–9½ vix convexiuseuli, sutura lineari parum impressa disjuncti, minute striatuli, ultimus subtus leviter attenuatus, dorso rotundatus, basi leviter sulcatus et circa rimam crista brevi angusta cristatus, penultimo parum altior. Apertura subverticalis, subrecta, magna, irregulariter late piriformis sinulo angusto; peristoma late expansum, albolabiatum, superne breviter solutum et supra lamellam superiorem angulato-sinuatum; lamellæ marginales, superior parum obliqua, antice valde elevata, dein subito humilior cum spirali continua, inferior ab illa remota, sigmoidea ascendens, intus subbipartita recedens, a basi intuenti vix spiraliter torta, subcolumellaris valida, emersa, submarginalis. Apparatus claustralis ut in *C. basilissa*, sed plica principali a sutura valde remota, introrsum minus profunde intrante, lunella exacte dorsali. Alt. 38–41 mm.; diam. med. 9.5–10 mm.; alt. apert. 10.5–11, lat. apert. 8 mm.

Two specimens of this magnificent species were found by Mr. A. E. Pratt, near a village called Mu-ssu-kow, in Western Sytshouan, at an elevation of from 5000 to 7000 feet.

The position of the lunella, which is exactly dorsal, and the clumsiness of the apex, which reminds one of *C. paradoxa*, Gredler, separate